



# Applied Mathematical Sciences

This section is centered on the contributions of basic and applied mathematics to a myriad of important elements in the nuclear weapons enterprise. The first article describes an important new mathematical technique for accurate interface reconstruction. Other articles discuss efficient and accurate solvers and solver preconditioners of critical importance to multiple applications at Los Alamos National Laboratory. An article on examining discretizations on polyhedral methods also appears, as well as articles on new search and tensor multiplication methods. Like the field of computer science, applied mathematics is a complex and foundational field, with important contributions spanning the gamut of the nuclear weapons program. While these seven articles describe some key research and development activities in this field germane to the nuclear weapons program, one can find the applied mathematics at the foundation of all of the articles in this entire document. No other field of endeavor has both such a broad and deeply penetrating impact on science.